

WHAT IS CLAIMED IS:

1. A communication device, comprising:
  - a transmission unit configured to transmit a  
5 packet to a prescribed destination address;
  - a reception unit configured to receive a response  
packet for responding to the packet transmitted by the  
transmission unit;
  - a first detection unit configured to detect a  
10 source address contained in the response packet  
received by the reception unit;
  - a second detection unit configured to detect an  
identifier indicating that an anycast address is  
assigned to another communication device that has the  
15 prescribed destination address, which is contained in  
the response packet, when the source address detected  
by the first detection unit and the prescribed  
destination address are different; and
  - a verification unit configured to verify the  
20 response packet, according to the identifier detected  
by the second detection unit.
2. The communication device of claim 1, wherein the  
communication device functions as a boundary router  
25 device located at a boundary between a first network to  
which a server device having an anycast address belongs

and a second network, and the communication device further comprises:

a second reception unit configured to receive one packet destined to the server device, from another  
5 communication device on the second network;

a first transfer unit configured to transfer the one packet to the server device;

a third reception unit configured to receive one response packet for responding to the one packet, from  
10 the server device;

a third detection unit configured to detect another identifier indicating that a source address different from the anycast address is attached, which is contained in the one response packet;

15 a second verification unit configured to verify that the one response packet is a response transmitted from the server device, according to information regarding server devices having the anycast address in the second network which are provided in advance, when  
20 the another identifier is detected by the third detection unit;

a transfer control unit configured to control whether or not to transfer the one response packet to the another communication device, according to a  
25 verification result of the second verification unit;  
and

a second transfer unit configured to transfer the one response packet to the another communication device, when the transfer control unit judges that the response packet should be transferred.

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3. A server device connected to a first network and having an anycast address, comprising:

a reception unit configured to receive a packet transmitted to the anycast address, from a  
10 communication device connected to a second network;  
an identifier attaching unit configured to attach to a response packet for responding to the packet an identifier indicating that a source of the response packet has the anycast address; and  
15 a transmission unit configured to transmit the response packet to the communication device.

4. A communication system, comprising: <sup>h</sup>

a server device connected to a first network and  
20 having an anycast address;

a communication device connected to a second network; and

a boundary router device located at a boundary between the first network and the second network;

25 wherein the communication device has:

a first transmission unit configured to

transmit a packet to the anycast address; and

a first reception unit configured to receive a response packet for responding to the packet from the server device;

5 the server device has:

a second reception unit configured to receive the packet transmitted to the anycast address from the communication device;

an identifier attaching unit configured to  
10 attach to the response packet for responding to the packet a first identifier indicating that the server device has the anycast address; and

a second transmission unit configured to transmit the communication device to the response  
15 packet; and

the boundary router device has:

a third reception unit configured to receive the packet destined to the server device from the communication device;

20 a first transfer unit configured to transfer the packet to the server device;

a fourth reception unit configured to receive the response packet for responding to the packet from the server device;

25 a detection unit configured to detect a second identifier indicating that a source address different

from the anycast address is attached, which is  
contained in the response packet;

a verification unit configured to verify that  
the response packet is a response transmitted from the  
5 server device, according to information regarding  
server devices having the anycast address in the first  
network which is provided in advance, when the second  
identifier is detected by the detection unit;

a transfer control unit configured to control  
10 whether or not to transfer the response packet to the  
communication device, according to a verification  
result of the verification unit; and

a second transfer unit configured to transfer  
the response packet to the communication device, when  
15 the transfer control unit judges that the response  
packet should be transferred.

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5. A communication method at a communication device,  
comprising:

20 transmitting a packet to a prescribed destination  
address;

receiving a response packet for responding to the  
packet;

detecting a source address contained in the  
25 response packet;

detecting an identifier indicating that an anycast

address is assigned to another communication device  
that has transmitted the response packet, which is  
contained in the response packet, when the source  
address and the prescribed destination address are  
5 different; and

verifying the response packet, according to the  
identifier.

6. The communication method of claim 5, wherein the  
10 communication device functions as a boundary router  
device located at a boundary between a first network to  
which a server device having an anycast address belongs  
and a second network, and the communication method  
further comprises:

15 receiving one packet destined to the server  
device, from another communication device on the second  
network;

transferring the one packet to the server device;

receiving one response packet for responding to  
20 the one packet, from the server device;

detecting another identifier indicating that a  
source address different from the anycast address is  
attached, which is contained in the one response  
packet;

25 verifying that the one response packet is a  
response transmitted from the server device, according

to information regarding server devices having the  
anycast address in the second network which are  
provided in advance, when the another identifier is  
detected;

5       controlling whether or not to transfer the one  
response packet to the another communication device,  
according to a verification result; and

transferring the one response packet to the  
another communication device, when it is judged that  
10 the one response packet should be transferred.

7.     A computer program product for causing a computer  
to function as a communication device, the computer  
program product comprising:

15       a first computer program code for causing the  
computer to transmit a packet to a prescribed  
destination address;

a second computer program code for causing the  
computer to receive a response packet for responding to  
20 the packet;

a third computer program code for causing the  
computer to detect a source address contained in the  
response packet;

a fourth computer program code for causing the  
25 computer to detect an identifier indicating that an  
anycast address is assigned to another communication

device that has transmitted the response packet, which is contained in the response packet, when the source address and the prescribed destination address are different; and

5       a fifth computer program code for causing the computer to verify the response packet, according to the identifier.

8.    The computer program product of claim 7, wherein  
10   the computer is caused to function as a routing method at a boundary router device located at a boundary between a first network to which a server device having an anycast address belongs and a second network, and the computer program product further comprises:

15       a sixth computer program code for causing the computer to receive one packet destined to the server device, from another communication device on the second network;

      a seventh computer program code for causing the  
20   computer to transfer the one packet to the server device;

      an eighth computer program code for causing the computer to receive one response packet for responding to the one packet, from the server device;

25       a ninth computer program code for causing the computer to detect another identifier indicating that a



source address different from the anycast address is attached, which is contained in the one response packet;

5 a tenth computer program code for causing the computer to verify that the one response packet is a response transmitted from the server device, according to information regarding server devices having the anycast address in the second network which are provided in advance, when the another identifier is  
10 detected;

an eleventh computer program code for causing the computer to control whether or not to transfer the one response packet to the another communication device, according to a verification result; and

15 a twelfth computer program code for causing the computer to transfer the one response packet to the another communication device, when it is judged that the one response packet should be transferred.

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